

S/0051/64/016/004/0602/0614

ACCESSION NR: AP4032365

AUTHOR: Kaplyanskiy, A.A.

TITLE: Noncubic centers in cubic crystals and piezospectroscopic investigation of such centers

SOURCE: Optika i spektroskopiya, v.16, no.4, 1964, 602-614

TOPIC TAGS: crystal lattice defect, cubic crystal, crystal structure, noncubic center, anisotropic center, orientational degeneracy, dipole transition, piezospectroscopic effect

ABSTRACT: The present paper is a continuation and extension of earlier studies by the author and his associates (numerous references are cited). It is devoted to consideration of the properties and attributes of different noncubic (tetragonal, trigonal, orthorhombic (two types), monoclinic (two types), and triclinic) centers that may form in cubic crystals. Such noncubic or anisotropic centers are essentially lattice defects and are characterized by different orientations (orientational degeneracy). A piezospectroscopic method for investigating such centers was proposed earlier by the author (Opt.i spektro.7,677,1959; Ibid.10,165,1961; Izv.AN SSSR,

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ACCESSION NR: AP4032865

Fig. 25, 20, 1961). It is based on the fact that under compression (equivalent to removal of orientational degeneracy along the compression axis) the energy levels are shifted differently in differently oriented centers with the result that the spectral bands (lines) of the centers exhibit reversible splitting into several components, each of which is associated with transitions in one or more groups of the noncubic centers with a given orientation relative to the compression axis. The specific characteristics of the anisotropic centers that may give rise to the piezospectroscopic effect are discussed. It is shown that there can form in cubic crystals noncubic centers with five different kinds of symmetry (see above) that satisfy the requirements for appearance of the piezospectroscopic effect. The probable effects of these different anisotropic centers are predicted. Selection rules are given for dipole transitions in the noncubic groups. A final table gives the results of evaluation of the piezospectroscopic effect in cubic crystals with the different species of noncubic centers under compression along the  $[100]$ ,  $[111]$ , and  $[110]$  axes. Lastly, the possibility of the piezospectroscopic effect being manifested in noncubic host crystals with orientationally degenerate centers is examined briefly. Orig.art.has: 7 formulas, 2 figures and 3 tables.

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ACCESSION NR: AP4032865

ASSOCIATION: none

SUBMITTED: 18Apr63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: SS

NR REF SOV: 010

OTHER: 005

Card 3/3

ACCESSION NR: AP4032866

S/0051/64/016/004/0619/0627

AUTHOR: Kaplyanskiy, A.A.; Moskvina, N.A.; Feofilov, P.P.

TITLE: Investigation of the electric and magnetic series in the luminescence spectra of alkali fluorides activated by hexavalent uranium

SOURCE: Optika i spektroskopiya, v.16, no.4, 1964, 619-627

TOPIC TAGS: luminescence spectrum, polarized luminescence, luminescence center, level diagram, luminescence temperature, uranium activated lithium fluoride, uranium activated sodium fluoride, uranium  $6^{+}$

ABSTRACT: The present study is a continuation of investigations of the electric and magnetic series of lines and bands in the luminescence spectra of LiF and NaF crystals activated by hexavalent uranium. A number of earlier studies by the authors and other non-Soviet experimenters are referred to and discussed. The crystals were grown at the Institute of Crystallography of the Academy of Sciences SSSR. Most of the measurements were performed on NaF:U $6^{+}$  crystals, in the spectrum of which the series are more clearly pronounced, but the principal inferences apply to LiF:U crystals as well. The measurements (mostly at liquid-nitrogen temperature) in-

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ACCESSION NR: AP4032866

cluded determination of the degree of polarization  $P$  of the luminescence as a function of the wavelength of the exciting light,  $\lambda_{\text{excit}}$ . There was established qualitative mirror symmetry of the  $P$  versus  $\lambda_{\text{excit}}$  curves for the electric and the magnetic series, which is interpreted as indicating that the same or common centers are responsible for the electric and magnetic dipole series. Also studied were the intensity distributions in the electronic-vibrational (vibronic) series (the observed distributions agree with the predictions of theory) and the temperature dependence of the luminescence spectra of  $\text{LiF:U}$  and  $\text{NaF:U}$ . an increase in temperature in the range from liquid nitrogen to about  $350^\circ\text{K}$  results in a shift of the electric and magnetic luminescence spectra (lines) to the long wavelength side; the shifts are approximately the same for most lines, but a few lines appear to be more "temperature sensitive". The temperature shift is associated with a change in the lattice parameters with heating. Level diagrams for the luminescence centers in  $\text{LiF:U}$  and  $\text{NaF:U}$ , based on the results of the temperature variation measurements and other data, are presented. Curves are given for the temperature dependences of the intensities of the head bands of the electric and magnetic series; the intensity of the former increases with rising temperature; that of the latter falls off. A value of approximately  $10^3$  is adduced for the ratio of the probabilities for electric and magnetic transitions. Superficial similarities between the levels and transitions in the investigated crystals and in  $\text{MeF:Sm}^{2+}$  (where  $\text{Me} = \text{Sr}$  or  $\text{Ba}$ ) are noted. Orig. art. has: 6 figures, 5 formulas, and 1 table.

Card 2/3

ACCESSION NR: AP4032866

ASSOCIATION: none

SUBMITTED: 21Jun63

SUB CODE: IC, OP

ATD PRESS: 3081

NR REF SOV: 009

ENCL: 00

OTHER: 003

Card 3/3

ACCESSION NR: AP4039707

S/0051/64/016/006/1031/1044

AUTHOR: Kaplyanskiy, A. A.

TITLE: Computation of deformation splitting of spectral transitions in cubic crystals

SOURCE: Optika i spektroskopiya, v. 16, no. 6, 1964, 1031-1044

TOPIC TAGS: level transition, band spectrum, band splitting, cubic crystal, deformation splitting

ABSTRACT: The deformation splitting of the bands corresponding to all the possible allowed electric and magnetic transitions between the  $O_h$  and  $T_d$  levels of the crystalline field are analyzed by a group-theoretical method, which makes it possible to obtain the number of the splitting components and establish their polarization. The calculations are then repeated using perturbation theory, which

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ACCESSION NR: AP4039707

makes it possible in addition to determine the distances between components and the degree of polarization of the splitting components. In addition, transitions are considered which are forbidden in a cubic field but are allowed in the case of deformation distortion of the cubic symmetry of the field. It is shown that the splitting of excitation bands has been interpreted in the literature in two ways. "The author is grateful to G. L. Bir for useful advice and discussions." Orig. art. has: 12 formulas and 5 tables.

ASSOCIATION: None

SUBMITTED: 18Apr63

DATE ACQ: 24Jun64

SUB CODE: OP

NR REF SOV: 012

ENCL: 00

OTHER: 012

Card 2/2



I. 9224-66	BWT(1)/BWT(m)/EWP(t)/EWP(b)	IJP(c)	JD/JW
ACC NR: AP5026095		SOURCE CODE: UR/0386/65/002/005/0209/0212	
<p>AUTHOR: <sup>44,55</sup> Kaplyanskiy, A. A.; <sup>44,55</sup> Medvedev, V. N.</p> <p>ORG: <sup>44,55</sup> Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tehnicheskii institut AN SSSR)</p> <p>TITLE: Pseudo-Stark splitting of the <math>4f \rightarrow 5d</math> lines of <math>Ce^{3+}</math> ions in <math>CaF_2</math> crystals</p> <p>SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. (Prilozheniye), v. 2, no. 5, 1965, 209-212, and insert, side B, between p. 238 and 239</p> <p>TOPIC TAGS: calcium <u>fluoride</u>, <sup>21,44,55</sup> Stark effect, line splitting, UV spectrum, electron transition</p> <p>ABSTRACT: This is a continuation of earlier work (Optika i spektroskopiya v. 14, 664, 1963 and v. 18, 803, 1965), and is devoted to observation of linear pseudo-Stark splitting of the <math>4f \rightarrow 5d</math> bands in the ultraviolet absorption spectra of the cubic crystals of <math>CaF_2</math> with <math>Ce^{3+}</math>. The authors investigated primarily <math>CaF_2-Ce^{3+}</math> crystals, in which the <math>Ce^{3+}</math> are in a local field of trigonal symmetry, and studied the influence of the electric field at 4.2K on narrow long-wave lines, the 3383.6 Å absorption line and the neighboring weak 3383.0 Å line of <math>CaF_2-Ce^{3+}</math>, corresponding to pure electronic transitions from the ground sublevel <math>^2F_{5/2}(4f)</math> to the lowest crystalline sublevels of the 5d state of <math>Ce^{3+}</math>. The static field was applied to single-crystal samples along the [111] axis; the spectra were observed in the directions perpendicular and parallel to the field. It was established that in an electric field the 3383.6</p>			
Cord 1/2			

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ACC NR: AP5026095

3  
and 3383.0 Å lines experience reversible splitting in symmetrically-arranged quartets. In the direction perpendicular to the field the two external components of the quartets are completely polarized with the electric vector perpendicular to the field for the 3383.6 Å line and parallel for the 3383.0 Å line. The splitting is proportional to the voltage applied to the electrodes. The linear character of the splitting shows directly that there is no inversion center in the trigonal field in which the  $\text{Ce}^{3+}$  ions are situated in the  $\text{CaF}_2$  crystals. This confirms convincingly the model proposed by P. P. Feofilov (with I. V. Stepanov, Dokl. AN SSSR v. 108, 615, 1956) for triply charged rare-earth centers in  $\text{CaF}_2\text{-TR}^{3+}$  crystals of the first type. It is also concluded that the complicated character of the pseudo-Stark splitting of the  $\text{CaF}_2\text{-Ce}^{3+}$  lines, compared with the  $3d^3$  ions in  $\text{Al}_2\text{O}_3$ , is connected with the fact that the anisotropic rare-earth centers have many orientations in the cubic lattice of  $\text{CaF}_2$ , and that the dipole moments of the  $4f \rightarrow 5d$  transitions in  $\text{Ce}^{3+}$  correspond to circular and linear electric oscillators oriented perpendicular and parallel to the trigonal axis of the center. The authors also observed a doublet splitting of the purely electronic 3131.7 Å absorption line of  $\text{CaF}_2\text{-Ce}^{3+}$  crystals of the second type, in which the  $\text{Ce}^{3+}$  ions are situated in a local trigonal field, also for the case when the field and the observation direction are parallel to [111]. Authors are grateful to Ye. F. Gross for interest in the work. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 25Jun65/ ORIG REF: 006/ OTH REF: 006

Cord 2/2

L 49031-65 EWT(1)

ACCESSION NR: AP000881

8/0181/65/007/003/0781/0781

AUTHOR: Agekyan, V. T.; Gross, Ye. F.; Kaplyanskiy, A. A.

TITLE: Indirect excitons and phonon spectrum of  $\text{Cu}_2\text{O}$

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 781-787

TOPIC TAGS: cuprous oxide, phonon spectrum, indirect exciton, uniaxial compression, single crystal, absorption step, compression splitting

ABSTRACT: This is a continuation of earlier studies (PTT v. 2, 2968, 1964, and others) devoted to the influence of inelastic uniaxial compression deformation of  $\text{Cu}_2\text{O}$  single crystals on various elements of the exciton spectrum. The present study is devoted to the influence of uniaxial compression of  $\text{Cu}_2\text{O}$  on the indirect exciton spectrum with long-wave edge of the spectrum. The samples were elongated with triangular plate and the compression was  $\sim 30 \text{ kg/mm}^2$  along one of the principal crystallographic directions  $\langle 100 \rangle$ ,  $\langle 111 \rangle$ , or  $\langle 110 \rangle$ . The spectrum was photographed with a KDA-12 camera with a glass optical system. An anisotropic reversible splitting of the spectrum

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L 49031-65

ACCESSION NR: AP5006891

was observed upon deformation. The properties of deformation splitting have made it possible to establish that the absorption in the step is due to indirect transitions to the principal 1s-exciton band of  $\text{Cu}_2\text{O}$  producing phonons with  $\hbar = 800 \text{ cm}^{-1}$  and with symmetry  $\Gamma_{15}$ . This work has: 1 figure, 1 formula, and 2 tables.

ASSOCIATION: Fizmatkhnicheskii institut im. A. F. Ioffe AN SSSR,

(Physicotechnical Institute AN SSSR)

SUBMITTED: 15 Aug 64

ENCL: 00

SUB CODE: OP, SS

NR REF SOV: 010

OTHER: 006

*bsn*  
Card 2/2

I 64503-65 EFF(c)/EAA(c)/EAT(m)/EMP(b)/T/ENP(t) IJP(c) JW, II/JS  
ACCESSION NR: APR 1980 06 15/00513R/000720510012-3

AUTHORS: Kaplyanskiy, A. A.; Medvedev, V. N.

TITLE: Piezospectroscopic determination of the symmetry of the crystalline field acting on triply charged rare earth ions in calcium fluoride.

SOURCE: Optika i Spektroskopiya, v. 18, no. 1, 1983, p. 1-4.

TOPIC TAGS: calcium fluoride, pressure effect, impurity spectra, crystal symmetry, line splitting

ABSTRACT: The authors investigated experimentally at 4.2K the influence of deformation of uniaxial compression on the absorption spectra of triply charged rare earth ions  $\text{LaF}_3\text{-Ce}^{3+}$  and  $\text{LaF}_3\text{-Pr}^{3+}$  in different rhombohedral orientations. The pressure dependence of the absorption spectra was studied. The results are discussed.

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L 64508-65

ACCESSION NR: AP5012606

in  $\text{CaF}_2$  and to determine their symmetry. The investigation was concentrated on crystals grown under reducing conditions.

The symmetry of the  $\text{Ti}^{3+}$  ions was not determined. The piezospectroscopic method used for the investigation of frequently-encountered noncubic local centers in the crystals used in the present work, was developed and described by the authors earlier (Korolovskiy, Opt. i spektr., v. 11, no. 1, 1966, 1967, 1968, 1969). The piezospectroscopic method is based on the observation of the change in the piezospectroscopic effect of the local centers in the crystals under the action of mechanical stress.

and in the piezospectroscopic effect of the noncubic local centers in the crystals. The piezospectroscopic effect of the rare earth centers of various types in  $\text{CaF}_2$  is investigated.

L 64508-65

ACCESSION NR: AP5012606

2

--- "Rebelle, for a useful discussion." orig. art. has: 1 table.

ASSOCIATION: KLM

MEMO: Y

NR REF SOV: 012

OTHER: 014

<sup>KS</sup>  
Card 3/3

AUTHORS: Kaplan, A. A.; Kaplan, N. A., et al.

TITLE: Concerning the symmetry of narrow-band luminescence and absorption spectra of  $\text{LiF}$  crystals

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 882-884

TOPIC TAGS: luminescence center, luminescence spectrum, crystal, uniaxial crystal, line splitting, pressure effect

ABSTRACT: The article deals with the effect of pressure on the luminescence of  $\text{LiF}$  colored by  $\text{Co}^{60}$  rays. The method applied is the one previously employed by one of the authors in the study of the luminescence of  $\text{LiF}$  crystals.

the compression axis. Light polarized with respect to the compression axis perpendicular to  $\text{E}$  was used. It is shown by means of a series of experiments that the luminescence of  $\text{LiF}$  crystals is anisotropic.

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L 64469-65

ACCESSION NR: AP5012618

trorocopl. It is that the 5.843 Å line is associated with the  
of rhombohedral center which has a different phase  
the other rhombohedral centers of the  
the situation is in the present of the  
the situation is in the present of the

band of 117 (300 -1) was also examined. At  $\omega = 10^\circ$   
about 10 kg/cm<sup>2</sup> the line appears as a singlet for P paral-  
<00> and a doublet for P parallel to <111> and P paral-

that the deformation of the  
the experimental picture observed at 4.2K are in good agree-  
the situation is in the present of the

preferentially accepted are those for which the  
may be similar to the situation in the present of the  
of the situation is in the present of the

Card 2/3

L 64469-55

ACCESSION NR: AP5012618

ters in deformed cubic crystals. Orig. art. has: 1. 112.111

ASSOCIATION: None

SUBMITTED: 14Aug64

ENCL: 00

SUB CODE: 0P

NR REF SOV: 00"

OTHER: 010

Card

3/3

L 4874-66 EWT(1)/EWT(m)/ETC/EWG(m)/EWP(t)/EWP(b) IJP(c) RDW/JD

ACCESSION NR: AP5019843

UR/0181/65/007/008/2327/2329 56

AUTHORS: Kaplyanskiy, A. A.; Suslina, L. G. 44/55 47

TITLE: Deformation splitting of the fundamental exciton line in the reflection spectrum of ZnTe

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2327-2329

TOPIC TAGS: zinc, telluride, conduction band, valence band, exciton, line splitting, crystal deformation

ABSTRACT: In order to explain the properties of the lower conduction band and the upper valence band of ZnTe, between which an exciton state is produced, the authors investigated the influence exerted by directional deformation of the crystal on the 5236 Å (2.3675 eV) line. To this end, the splitting of this narrow exciton line was measured in single crystals of ZnTe, subject to elastic uniaxial compression along the <100>, <111>, and <110> axes at 77K. The procedure used was that described by D. G. Thomas (J. Appl. Phys. 32, 2298, 1961).

Cord 1/3

09010988

L 4874-66

ACCESSION NR: AP5019843

The reflection spectra were photographed in polarized light using a spectrograph (ISP-51) and a camera (UF-84). The 5236 Å line was found to experience a reversible doublet splitting upon deformation, with polarized doublets, observed in all three directions. The centers of gravity of the doublets were shifted towards the short wave side, but the long-wave side remained in the same position as in the unstressed crystal. The magnitude of the splitting could not be determined precisely because the reflection in the region of strong exciton absorption is determined in practice by the surface properties, so that the line splitting was very sensitive to inhomogeneities in the stress distribution on the surface. It is deduced from the data that the doublet splitting of the line is due to splitting of the valence band, and that the individual components of the doublet correspond to excitons connected with the unsplit  $\Gamma_7$  band and with one of the two valence subbands produced when the  $\Gamma_8$  band is split by the deformation. The deformation potentials of the  $\Gamma_8$  band are found to be 2.67 and 3.97 eV, and the difference in the displaced centers

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L 4874-66

ACCESSION NR: AP5019843

of gravity of the valence and conduction bands is found to be 8.7 ev. The results confirm the degenerate nature of the  $\Gamma_8$  band. 'The authors thank Ye. F. Gross<sup>55</sup> for interest in the work and G. L. Bir<sup>55</sup> for a discussion.' Orig. art. has: 1 figure

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)<sup>44,55</sup>

SUBMITTED: 15Feb65

ENCL: 00

SUB CODE: SS, OP

NR REF SOV: 005

OTHER: 007

PC  
Card 3/3

L 2406-66 EWP(e)/EWT(m)/EWP(1) WH

ACCESSION NR: AP5024753

CE/0030/65/011/002/0629/0634

AUTHOR: Kaplyanskii, A. A.; Przhevuskii, A. K.

TITLE: The strain-induced splitting of the U-band and the Jahn-Teller effect in the excited  ${}^4T_2$ -state of  $Cr^{3+}$  ions in ruby

SOURCE: Physica status solidi, v. 11, no. 2, 1965, 629-634

TOPIC TAGS: ruby, elastic strain, triplet splitting, Jahn Teller effect, absorption band

ABSTRACT: An investigation was made of the effect of uniaxial elastic strain on the 597 nm pure electronic line in the U-band ( ${}^4A_2 \rightarrow {}^4T_2$ ) of  $Cr^{3+}$  in ruby. The general features of the triplet splitting of the line by stress observed in the experiments were in good agreement with the phenomenological calculation for lines of low-symmetry ( $C_1$ ) centers in a  $D_{3d}$  lattice. This suggests that the  $C_3$  site symmetry of  $Cr^{3+}$  ions in the  $Al_2O_3$  lattice is destroyed, and supports the hypoth-

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L 2406-66

ACCESSION NR: AP5024753

esis of the existence of the Jahn-Teller effect in the excited  ${}^4T_2$ -  
state of  $Cr^{3+}$  in ruby. Orig. art. has: 4 figures and 1 formula. [CS]

ASSOCIATION: Leningradskiy fiziko-technicheskiy institut im. Akademika  
A. F. Ioffe (Leningrad Physicotechnical Institute)

SUBMITTED: 05Jul65

ENCL: 00

SUB CODE: SS

NO REF SOV: 003

OTHER: 010

ATD PRESS: 4101

PC

Card 2/2

L 3939-66 EWT(m)/EPF(c)/EWP(t)/EWP(b) IJP(c) JD/JW/JG  
ACCESSION NR: AP5025304

UR/OC51/65/019/004/0597/0610  
535.37+535.34:548.0

AUTHOR: Kaplyanskiy, A. A.; Przhevuskiy, A. K.

TITLE: Deformation splitting and an increase in intensity of spectral lines and the structure of excited levels of  $\text{Eu}^{2+}$  in alkaline earth fluorides

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1965, 597-610

TOPIC TAGS: elastic deformation, luminescence absorption, line splitting, fluorite

ABSTRACT: An investigation was made of the effect of the elastic deformation of  $\text{CaF}_2:\text{Eu}^{2+}$  and  $\text{SrF}_2:\text{Eu}^{2+}$  on their absorption and emission lines corresponding to transitions between the ground state of  $\text{Eu}^{2+}$   $8_{1/2}(4f^7)$  and the lowest excited states  $4f^65d$ . Elastic deformation caused splitting of the lines due to allowed transitions and an increase in the intensity of forbidden lines. The effects observed were interpreted, using the perturbation theory, on the basis of the effect of deformation on the system of neighboring levels. The symmetry of these levels was determined by this method. The experimental data obtained were used to analyze the system of levels of the mixed configuration  $4f^65d$  of  $\text{Eu}^{2+}$  in  $\text{MeF}_2$ . The structure of the vibration spectra of f-d luminescence in  $\text{MeF}_2:\text{Eu}^{2+}$  was also analyzed. Orig. art. has: 6 figures, 4 tables, and 1 formula. [CS]  
Card 1/2



L 3939-66

ACCESSION NR: AP5025304

ASSOCIATION: none

SUBMITTED: 13Jul64

NO REF SOV: 012

ENCL: 00

OTHER: 015

SUB CODE: OP, NP

ATD PRESS: 4/18

Card 2/2

DP

L 21010-66 EWP(k)/EWT(m)/ETC(f)/EWG(m)/EWP(w)/EWP(t) IJP(o) RDW/EM/JW/JD/EA

ACCESSION NR: AP5018074

UR/0020/65/163/001/0067/0070

AUTHOR: Kaplyanskiy, A. A.; Lozovskaya, N. G.

TITLE: Anomalous dispersion of stimulated birefringence during deformation, and the connection between photoelasticity and piezospectroscopic phenomena in crystals

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 67-70

TOPIC TAGS: light dispersion, double refraction, impurity band, photoelasticity

ABSTRACT: The authors investigated the wavelength dependence of the stimulated birefringence of crystals in the spectral region near the absorption bands. The dispersion of the photoelasticity was investigated by an interference procedure similar to that used earlier for other birefringence measurements (Optika i spektroskopiya v. 16, 602, 1031, 1964 and earlier papers). The apparatus is described briefly. The investigations covered the long-wave absorption lines of  $\text{CaF}_2\text{-Sm}^{2+}$  (6901 Å) and  $\text{CaF}_2\text{-Eu}^{2+}$  (4130 Å), and the 391 nm line in the spectrum of LiF. Tests were also made of the dispersion of the stimulated birefringence near the main absorption edge of  $\text{ZnTe}^{\text{cubic}}$  single crystals, in which deformation doublet splitting of the long wave exciton band (5236 Å) was observed. A direct connection is shown to exist between the "impurity" photoelasticity and the splitting and polarization of the impurity lines upon deformation. This is claimed to be the first observation

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ACCESSION NR: AP5018074

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of "impurity" photoelasticity. It is deduced that the "main" photoelasticity of crystals is due at least in part to deformation splitting and polarization of the exciton and interband bands in the principal absorption spectrum of the crystal. The photoelastic properties of the crystals are shown to be closely related to the quantum energy level states (intrinsic--exciton and band--as well as impurity), with the optical transitions in the crystal, and with the changes occurring in the energy spectrum upon deformation. The photoelasticity effect is derivable from the piezospectroscopic effect in the same way as the refractive index of the crystals is determined by its absorption spectrum. The stimulated birefringence study makes it possible to investigate the contribution of the bands, especially impurity bands, to the dispersion of the refractive index of the crystal and to find the oscillator strengths for the bands. It can also yield valuable information on the electronic levels of the crystal. Resonant photoelasticity is also of interest for piezo-optical modulation of light. "The authors thank Corresponding Member AN SSSR Ye. F. Gross for interest in the work and A. K. Przhevuskiy for help with the measurements." This report was presented by B. P. Konstantinov. Orig. art. has: 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. I. Ioffe AN SSSR (Physicotech-

Card 2/3

L 21010-66

ACCESSION NR: AP5018074

nical Institute, AN 888R)

SUBMITTED: 25Dec64

NR REF SOV: 008

ENCL: 00

SUB CODE: SS, OP

OTHER: 008

Card 3/3

L 42900-66 EWT(m)/ENP(t)/ETI IJP(c) JD/JW/JG

ACC NR: AP6018445

SOURCE CODE: UR/0051/66/020/006/1045/1057

AUTHOR: Kaplyanskiy, A. A.; Przhevuskiy, A. K.

ORG: none

TITLE: A piezospectroscopic analysis of the energy levels and transitions in Sm ions in crystals of alkali earth fluorides

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1045-1047

TOPIC TAGS: alkali earth, fluoride, absorption band, luminescence, electron oscillation

ABSTRACT: The effects of elastic monoaxial compression on a number of lines in  $\text{MeF}_2$ - $\text{Sm}$  spectra were examined at 77°K and 4.2°K [Me=Ca, Sr, Ba]. The single crystals were compressed monoaxially along  $\langle 100 \rangle$ ,  $\langle 111 \rangle$ , and  $\langle 110 \rangle$ . The obtained spectra were photographed by a DAS-1 diffraction spectrograph with a dispersion up to 1.0 Å/mm. An analysis of the spectroscopic splitting observed during deformation revealed the symmetry of levels  $4f^6$  and the lower levels  $4f^55d$ . It was found that latent levels  $4f^55d$  appear in the spectra of stressed crystals upon the rise of luminescence of the forbidden lines. The splitting of  $f$ - $d$  lines (which are of an electrical dipole nature) exceeds the splitting of  $f$ - $f$  lines (which have a magnetic dipole nature) approximately by one order of magnitude. This phenomenon results from the greater sensi-

UDC: 535.34 + 535.37 : 548.0.092

Card 1/2

L 42900-66

ACC NR: AP6018445

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vity of the  $4f^{5d}$  levels to variations in the field, as compared to the sensitivity of the levels of the screened  $4f^6$  shell. Obviously, there exists a symmetrical static distortion of the grid near  $\text{Sm}^{++}$  brought about by the difference between the atomic radii of  $\text{Sm}^{++}$  and of  $\text{Me}^{++}$ . A peculiar phenomenon is the absence of spectroscopic splitting and mixing of the  $4f^{5d}$  levels when  $P \parallel \langle 111 \rangle$ , where  $P$  = the axis of compression. This is caused by the participation of the  $e$ -states of the electron in the formation of  $4f^{5d}$ ; the wave function of the  $4f^{5d}$  levels may be rendered as symmetrized sums of products of the  $f$ - and  $e$ -functions. A classification system of the electron oscillation structure of the  $f$ - $d$  absorption bands of  $\text{MeF}_2\text{-Sm}^{++}$  is presented. The authors thank Ye. F. Gross and P. P. Feofilov for their interest in the work. Orig. art. has: 2 formulas, 7 figures.

SUB CODE: 20/

SUBM DATE: 20Feb65/

ORIG REF: 014/

OTH REF: 011

Card 2/2

L 04248-67 EWT(1) GW

ACC NR: AR6004667

SOURCE CODE: UR/0269/65/000/010/0036/0036

AUTHORS: Ponomarenko, L. M.; Kaplyanskiy, A. A.

41  
B

TITLE: Scattering of electromagnetic waves by a statistically rough lunar surface

SOURCE: Ref. zh. Astronomiya, Abs. 10.51.273

REF SOURCE: Tr. Nauchno-tekhn. konferentsii Leningr. elektrotekhn. in-ta svyazi,  
vyp. 1, 1964, 3-13

TOPIC TAGS: electromagnetic wave scattering, lunar reflectivity, lunar surface

ABSTRACT: An approximation method for calculating the basic characteristics of a signal scattered from a two-dimensional gaussian rough lunar surface is presented in connection with the study of the moon as a passive reflector for ultra-short wave radio communication. The problem is solved in the Kirchhoff approximation; it is also assumed that the average dimension of nonuniformities is much larger than the wavelength and that there is no shadowing of one portion of the surface by another. The intensity and average power of the scattered field are found under these assumptions. Comparison of the determined solution for the average power with experimental results shows that the solution describes only the specularly reflected component of the scattered field. Bibliography of 11 citations. G. Strelkov /Trans-  
lation of abstract/

SUB CODE: 03, 20

Card 1/1 fv

UDC: 523.164.8

L 04789-67 EWT(1)/EWT(π)/EWT(w)/EWT(1)/ETI IJP(c) 3D/EM

ACC NR: AP6024466

SOURCE CODE: UR/0181/66/008/007/2068/2073

AUTHOR: Dubinskiy, K. K.; Kaplyanskiy, A. A.; Lozovskaya, N. G.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-  
tekhnicheskii institut AN SSSR)

TITLE: Photoelastic properties of cubic ZnSe near the edge of the principal absorp-  
tion of crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2068-2073

TOPIC TAGS: photoelasticity, zinc compound optic material, absorption edge, double  
refraction, crystal optic property

ABSTRACT: This is a continuation of earlier work (DAN SSSR v. 163, 67, 1965) where  
experimental observation was reported of a connection between birefringence induced  
by deformation (photoelasticity) and piezospectroscopic phenomena in crystals. Since  
this connection leads to certain singularities in the photoelastic properties near  
the absorption bands in the crystal spectrum, the authors investigate the singulari-  
ties using as an example the photoelasticity of cubic zinc selenide in the region of  
the long-wave principal absorption edge. The zinc selenide crystals were grown from  
the melt under pressure in an argon atmosphere, subjected to uniaxial compression  
along the long side (which was parallel to either the  $\langle 100 \rangle$ ,  $\langle 111 \rangle$ , or  $\langle 110 \rangle$  axis).  
The dispersion of the photoelasticity of the cubic crystal was investigated in the  
2.24 - 2.71 eV range by means of an interference procedure similar to that described

Card 1/2



L 04789-67

ACC NR: AP6024466

by R. Srinivashan (Zs. Phys. v. 155, 281, 1959). The measurements have disclosed a reversal of the sign of the photoelasticity, a nonlinear dependence of the birefringence on the load, and the existence of isotropic photoelasticity in the spectral region near  $\sim 2.38$  ev. The results are interpreted from the point of view of a connection existing between the photoelasticity and the changes occurring in the principal absorption spectrum under deformation, and it is shown that the photoelastic properties of the crystal may differ noticeably near the absorption edge from the properties far from the edge. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/

SUBM DATE: 07Dec65/

ORIG REF: 006/

OTH REF: 008

Card 2/2 afs

KAPLYANSKIY, I. IL.

Electric Measurements; AC Current

Works of M. O. Dolivo-Dobrovolskii on  
electric measurement techniques for alternating  
current. Elektrichestvo no. 1, 1952

Doktor Tekhn. Nauk. Prof.

SO: Monthly List of Russian Accessions, Library of Congress, April 195<sup>42</sup><sub>3</sub>, Uncl

1. KAPLYANSKIY, A. Ye., Prof.
2. USSR (600)
4. Seignette Salts
7. Construction methods of Seignette-electrical apparatus. Elektrichestvo, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified

KAPLYANSKIY, A. Ye.  
USSR/Electricity - Piezoelectric Materials

Jan 53

"Methods for Designing Piezoelectric Equipment", Prof A. Ye. Kaplyanskiy, Dr Tech  
Sci, Leningrad

"Elektrichestvo", No 1, pp 44-48

Proposes method for designing circuits of piezoelectric apparatus using non<sup>l</sup>linear properties of piezoelectric materials (i.e., barium titanate). The method is based on direct or inverse analogy between these devices and equipment for the same purpose which employ the non<sup>l</sup>linear properties of ferromagnetic materials. From this viewpoint examines some voltage stabilizers and frequency multipliers. Examines new phenomenon of "ferropiezoresonance". Submitted 14 Mar 52.

KALANTAROV, P.L.; NEYMAN, L.R. [authors]; KAPLYANSKIY, A.Ye., doktor tekhnicheskikh nauk, professor; POLOTOVSKIY, L.S., kandidat tekhnicheskikh nauk, dotsent [reviewers].

Discussing a textbook in theoretical electric engineering for schools of higher education: "Theoretical bases of electric engineering." P.L.Kalantarov, L.R. Neiman. Reviewed by A.E.Kaplianskii, L.S.Polotovskii. Elektrichestvo no.10: 78-80 0 '53. (MLRA 6:10)

(Electric engineering) (Kalantarov, P.L.) (Neiman, L.R.)

KAPLYANSKIY, A.Ye., professor, doktor tekhnicheskikh nauk; TAMANTSEV, S.G., inzhener.

Remarks on S.G.Tamantsev's article: "Synchronous generator with self-excitation from a mechanical rectifier and with automatic voltage regulation."

A.E.Kaplianskii. Author's answer. S.G.Tamantsev. Elektrichestvo no.12:76-77 D '53. (MIRA 6:11)

(Electric machinery, Synchronous) (Kaplianskii, A.E.)  
(Tamantsev, S.G.)

and the other side of the world. The  
and the other side of the world. The  
and the other side of the world. The

KAP:VAN:GIV A 42

network. This leads to a unified treatment of both types. 3 9V



BOGORODITSKIY, N.P.; NEYMAN, L.R.; YERMOLIN, N.P.; KAPLYANSKIY, A.Ye.:  
ODINTSOV, G.V.; KOZYREV, B.P.

A.V. Berendeev, Elektrichestvo no.7:94 J1 '56.

(MLRA 9:10)

(Berendeev, Aleksei Viktorovich, d.1955)

An experimental investigation shows that the extinction of the arc by a rotating magnetic field of commercial frequency is in many cases more efficient than in others not less efficient than arc-quenching.

KAPLYANSKIY, A.Ye.

KAPLYANSKIY, A.Ye.; SHEVELEV, P.N.

Universal instrument for measurements of current, voltage, power,  
phase shift, and frequency. Izv. tekhn. no.6:68-70 N-D '57.

(Electric meters)

(MIRA 10:12)

105-58-3-13/31

**AUTHORS:**

Kaplyanskiy, A. Ye. , Doctor of Technical Sciences, Professor,  
Petrov, P. I. , Candidate of Technical Sciences (Leningrad)

**TITLE:**

Compensated Mechanical Commutating Rectifiers (Kompensiro-  
vannye kommutatornyye mekhanicheskiye vypryamiteli)

**PERIODICAL:**

Elektrichestvo, 1958, Nr 3, pp. 52 - 56 (USSR)

**ABSTRACT:**

At first the theoretical foundations are given. For rotating mechanical commutating rectifiers it is suitable to improve the commutation by means of introducing the rotation e.m.f. At first the compensation e.m.f.  $e'_{ka}$  and  $e'_{kb}$  are investigated, in the case of which the current variation law  $i_a(t)$ , which guarantees a sparkless commutation is taken for granted. The resistance variation law for the brush forms of contact  $R_a$  and  $R_b$  can be assumed either according to the hypothesis of O. G. Vegner (he assumes a constant decrease of voltage in the brush form of contact  $\Delta U = \text{const}$  (Ref 3), independent from the current density), or according to the hypothesis of I. S. Yelokhin (he assumes that  $R_a = R_b = R = \text{const}$ . (Ref 4)), or

Card 1/4

105-58-3-13/31

# Compensated Mechanical Commutating Rectifiers

according to the classical theory ( $R = \text{const}$ , on the total brush surface the specific value of  $R$  is equal and does not depend on the current density). For the purpose of solving the given task it is appropriate to apply the superposition method by means of dividing the computation into two stages. In the first stage it is assumed that  $e'_{ka} = e'_{kb} = 0$  and that the current is determined by the equivalent supply. For  $i'_a$  and  $i'_b$  the equations (3), (4) and (5) are derived. In the second stage it is assumed that  $e = e_b = 0$  and that the circuit of the supply is open, i.e.  $I_a = 0$ . Accordingly, as the amperages  $i_a$  and  $i_b$  are given, the equation (5) can be solved graphically or analytically. The solving of (3) and (4) renders possible the determination of  $i'_a$  and  $i'_b$  variations, which are necessary for the following determination of the compensation e.m.f. during the commutation period according to the first two hypotheses. - Finally, the equation (10) is obtained for the compensation e.m.f. - Herefrom it follows that the compensation e.m.f. possesses two components: the neutralizing e.m.f., which compensates the linear e.m.f.  $e_{ab} = e_a - e_b$ , and the commutating e.m.f., which compensates the reactive and the active voltage drop. For the purpose of

Card 2/4

105-58-3-13/31

# Compensated Mechanical Commutating Rectifiers

examining the above-mentioned problem, three models of mechanical commutating three-phase rectifiers with a compensation e.m.f. were built and investigated. The first two models were fed by a three-phase transformer. The oscillogram shows that, owing to the compensation e.m.f., the resulting linear voltages show zero-values, during which the commutating takes place according to the rectilinear law. The reactive coil with high inductivity in the direct current circuit almost completely smooths the rectified current and voltage. Both models worked satisfactorily: The degree of sparking at 30 V on the direct current voltage-side and 20 A did not exceed  $1 \frac{1}{4}$ . The efficiency of the rectifiers themselves amounted to 96 %, and taking into consideration the transformer- and synchromotor losses - 81,8 %. - In the third model the deficiencies of the first two models were removed. The compensation e.m.f. are obtained from an auxiliary generator and are fed into the circuit across a three-phase group of monophase transformers, which feed the rectifier.

Card 3/4

The experimental investigation of the model showed its satis-

105-58-3-13/31

Compensated Mechanical Commutating Rectifiers

factory operation, at stabilized modes of operation of up to 25 A and 23 V, as well as at short, twice repeated overloads. There are 8 figures and 4 references, **all Soviet**.

SUBMITTED: May 27, 1957

RECEIVED: [illegible] of [illegible]

Card 4/4

HEYMAN, Leonid Robertovich; KALANTAROV, Pavel Lazarevich; KAPLYANSKIY,  
A.Ye., prof., retsentsent; ZAYTSEV, I.A., red.; KIYANITSYNA,  
M.S., red.; BEREDNIKOVA, V.F., red.; SOBOLEVA, Ye.M., tekhn.red.

[Theoretical fundamentals of electrical engineering; in three  
parts] Teoreticheskie osnovy elektrotekhniki, v trekh chastiakh.  
Izd.5., perer. Moskva, Gos.energ.isd-vo. Pt.1. [Physical  
fundamentals of electrical engineering and the theory of d.c.  
circuits] Fizicheskie osnovy elektrotekhniki i teoriya tsepei  
postoiannogo teka. 1959. 296 p. (MIRA 12:7)  
(Electric engineering)



SOV/105-59-5-26/29

8(0)

AUTHORS:

Ginzburg, S. G., Greyner, L. K., Zakharov, S. N.,  
Kaplyanskiy, A. Ye., Neyman, L. R., Netushil, A. V., Petrov,  
~~L. S., Pines, G. Ya., Polivanov, K. M., Savenko, V. G., et al~~

TITLE:

Vladimir Borisovich Romanovskiy

PERIODICAL: Elektrichestvo, 1959, Nr 5, p 93 (USSR)

ABSTRACT:

On January 13, 1959, Vladimir Borisovich Romanovskiy, Professor, Doctor of Technical Sciences, died at the age of 63. He started his activity as an engineer in the design office of the "Elektroapparat" Works in 1926. Soon he became head of the works laboratory. Since 1937, he was head of the Chair of Theoretical Electrotechnics at the Leningradskiy elektrotekhnicheskii institut svyazi im. M. A. Bonch-Bruyevicha (Leningrad Communications Electrical Engineering Institute imeni M. A. Bonch-Bruyevich). At the same time, he maintained his relations to the works where he was a counsel, chief electrical engineer and a permanent member of the technical council. He is one of the founders of the theoretical principles for the building of high-voltage apparatus. At the chair he was occupied with calculations of transition processes in electric current circuits which were also the subject of his doctoral thesis. He published more than 40 scientific papers.

Card 1/2

Vladimir Borisovich Romanovskiy

SOV/105-59-5-26/29

He bore the Badge of Honor and various medals. There is 1 figure.

Card 2/2

KAPLYANSKIY, Aleksandr Yevseyevich; IDEL'SON, E.I., red.; LEONOVA,  
B.I., tekhn.red.

[Methods of teaching the theoretic fundamentals of electrical  
engineering] Metodika preporavaniia teoreticheskikh osnov  
elektrotekhniki. Moskva, Gos.energ.isd-vo, 1959. 129 p.

(MIRA 13:3)

(Electric engineering--Study and teaching)

POLOTOVSKIY, Lev Solomonovich; SHCHEDRIN, N.N., prof., retsenzent;  
KAPLYANSKIY, A.Ye., prof., red.; ZHITNIKOVA, O.S., tekhn.red.

[High-voltage d.c. capacitance machinery] Emkostnye mashiny  
postoiannogo toka vysokogo napriazhenia. Moskva, Gos.energ.  
izd-vo, 1960. 146 p. (MIRA 14:3)  
(Electric machinery--Direct current)

KAPLYANSKIY, Aleksandr Yevseyevich, doktor tekhn. nauk, prof.; LYSENKO,  
Aleksy Petrovich, kand. tekhn. nauk, dotsent; POLTOVSKIY, Lev  
Solomonovich, kand. tekhn. nauk, dotsent; KAZARNOVSKIY, D.M.,  
red.; SOBOLEVA, Ye.M., tekhn. red.

[Theoretical fundamentals of electrical engineering] Teoreticheskie  
osnovy elektrotehniki. Moskva, Gos. energ. izd-vo, 1961. 526 p.  
(MIRA 14:10)

(Electric engineering)

KAPLYANSKIY, A.Ye., prof., doktor tekhn.nauk

"Methods for solving problems on transient processes in  
electrical networks." S.G. Ginzburg. Reviewed by A.E.  
Kaplanski. Izv. vys. ucheb. zav.; elektromekh. 3 no.6:148-150  
'60. (MIRA 15:5)

(Electric networks)  
(Ginzburg, S.G.)

KAPLYANSKIY, A.Ye., doktor tekhn.nauk, prof. (Leningrad); USATIN, P.B.,  
inzh. (Leningrad); BRENNER, G.L., inzh. (Leningrad)

Portable multirange meter for measuring voltage, amperes, ohms,  
watts, and vars. Elektrichestvo no.5:84-87 My '62. (MIRA 15:5)  
(Electric meters)

KAPLYANSKIY, A.Ye., doktor tekhn.nauk, prof. (Leningrad); GINZBURG, S.G.,  
kand.tekhn.nauk (Leningrad)

Concerning the order of the differential equation of a transient  
process in a complex electrical network. Elektrichestvo no.10:  
57-59 0 '62. (MIRA 15:12)

(Electric networks) (Differential equations)



KAPLYANSKIY, A.Ye., doktor tekhn.nauk, prof. (Leningrad)

Problems of electrical reactive motors and direct conversion of  
thermal energy to electric power. Elektrichestvo no.11:7-13

N '62.

(MIRA 15:11)

(Thermoelectric generators) (Thermoelectricity)

KAPLYANSKIY, A.Ye., doktor tekhn. nauk, prof. (Leningrad); DODOTCHENKO,  
V.V., inzh. (Leningrad); KONONOV, S.P., inzh. (Leningrad)

Magnetic plasma and ion flow motors and d.c. generators.  
Elektrichestvo no.5:88-91 My '64. (MIRA 17:6)

KAPLYANSKIY, B.A.

Instrument for the recording of the circulating load of a  
crushing machine. Obog.rud 5 no.4:35-40 '60. (MIRA 14:8)  
(Recording instruments) (Crushing machinery)

AFANAS'YEV, T.P.; GASHICHEV, V.I.; YELIN, S.N.; KAPLYANSKIY, B.A.;  
LAVROVA, G.I.

Automation of crushing and grinding processes at the No.1  
Apatite-Nephelite Ore Dressing Plant. Obog. rud 9 no.4:  
36-41 '64. (MIRA 18:5)

KAPLANSKIY, B. S.

Comparative examination of the electrophoretic changes in the blood serum proteins and the morphological changes in liver tissue in inflammatory processes of the gallbladder and bile ducts. Khirurgiia 37 no.7:39-47 J1 '61. (MIRA 15:4)

1. Iz 2-y kafedry klinicheskoy khirurgii (zav. -- prof. B. K. Osipov) Tsentral'nogo instituta usovershenstvovaniya vrachev na baze 50-y Gorodskoy bol'nitsy (glavnyy vrach N. P. Brusova) Moskv.

(LIVER) (BLOOD PROTEINS) (BILIARY TRACT---DISEASES)  
(PAPER ELECTROPHORESIS)

ALEKSEYEV, B.G.; KRAVTSOV, A.F.; YEVICH, A.D.; KAPLUNSKIY, I.A.;  
POLETAYEV, B.L.; TARASOV, K.K.

Automatic control of valve reversol in regenerative soaking  
pits. Met. i gornorud. prom. no. 2:34-35 Mr-Ap '64. (MIRA 17:9)

KATLYANSKIY, A.A.

Calculating the deformational splitting of spectral transitions  
in cubic crystals. Opt. i spektr. 16 no.6:1031-1044 Jo '64.  
(PIRA 17:9)

YAKHINSON, B.I. (Odessa); KAPLYANSKIY, A.Ye. (Leningrad); ZOGALOV, G.I.  
(Moskva)

Order of the differential equation of a transient process in a  
complex electrical network. Elektricheskaya Energiya 1974 Ag 154.  
(MIRA 17:11)



COUNTRY : USSR J  
 CATEGORY : Soil Science. Soil Biology.  
 RES. JOUR. : RZhBiol., No. 4, 1959, No. 1, 3/59  
 AUTHOR : Kaplyuk, I.F.  
 INST. : Scientific Res. Inst. of Agric. in the Extreme \*  
 TITLE : Group Composition of Humus of Reclaimed Virgin  
 Soils of Forest Tundra.

ORIG. PUB. : Byul. nauchno-tekhn. inform. N.-i. in-t, s.kh.  
 Krayn. Severa, 1957, No. 2, 34-36

ABSTRACT : The humus of turf-podzolic soils in the tundra of  
 the region of the Salekhardskaya experimental  
 station contains more than 25% humic acids bound  
 with Fe and Ca. The ratio of fulvic acids to hum-  
 ic acids was less than one. In podzolic-tlevey  
 soils the humus was composed mainly of fulvic acid,  
 and the most active fulvic acids were bound to Al.  
 -- S.A. Nikitin  
 \* North

Qualitative composition of humus in the Ob' forest-tundra soils  
 and its change under cultivation. Pochvovedenie no. 5:51-61  
 My '62. (MIRA 15:6)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva  
 Kraynego Severa.

(Ob' Valley--Humus)

KAPLYUK, I.F.

Some characteristics of the gley and slightly Podzolic  
soils in the northern Ob' Valley of the Salekhard region.  
Pochvovedenie no.1:48-58 Ja '64. (MIRA 17:3)

1. Krymskaya gorno-lesnaya opytnaya stantsiya.

KAPLYUK, L.F.

Residual alluvial turf soils of the wooded tundra in the Ob' Valley.  
Pochvovedenie no.11:34-44 N '62. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva  
Kraynego Severa.

(Salekhard region--Soils)

RAILICK, N.

KOZUB, Fedor Samsonovich, gornyy inzhener; KAPLYUK, N., redaktor; ZMIY, V.,  
tekhnicheskiy redaktor

[According to Anton Zinkov's method] Po metodu Antona Zin'kova.  
[Dnepropetrovsk] Dnepropetrovskoe obl.izd-vo, 1956. 60 p.  
(Mining engineering) (MLRA 10:9)

KAPNER, R. B.

KAPNER, R. B. -- "The effect of acid and alkaline feed on the progress of the oxidation and nitrogen metabolism and the functions of enzymes in the animal organism".  
Moscow, 1955. All-Union Sci Res Inst of Animal Husbandry, Laboratory of  
Biochemistry.. (Dissertation for the Degree of Candidate of Biological Sciences).

SO: Knizhnaya Letopis' No. 46, 12 November 1955. Moscow

KAPNER, R. B.

U.S.S.R. / Human and Animal Physiology. Metabolism. T

Abs Jour: Ref Zhur-Biol., No 5, 1958, 21954.

Author : Kovalsky V. P., Kapner R. B.

Inst : Not given.

Title : Adaptive Changes of Certain Dehydrogenases and  
and Arginases in the Organism of Animals.

Orig Pub: Dokl. AN. S.S.S.R., 1957, 112, 5, 905-908.

Abstract: Chinchilla rabbits weighing 2.7-3kg were fed,  
in the course of 30-40 days, different rations  
(cereals and vegetables). The rations con-  
tained, in effect, equivalent amounts of nu-  
tritional units and digestible proteins. Fol-  
lowing the cereal ration the intensity of the  
dehydrogenation processes (the activity of suc-  
cinate dehydrogenase, dehydrogenase, alpha-gly-

Card 1/2

24

KAPNER, R.B.

GURVICH, A.Ye.; KAPNER, R.B.

Quantitative determination of antibody content by the precipitation  
on paper. Lab.delo 4 no.2:23-26 Mr-Apr '58. (MIRA 11:4)

1. Iz laboratorii fiziologicheskoy khimii Instituta biologicheskoy  
i meditsinskoy khimii AMN SSSR.  
(ANTIGENS AND ANTIBODIES)

GURVICH, A.Ye.; KAPNER, R.B.; NEZLIN, R.S.

Isolation of pure antibodies by the of antigens fixed on cellulose  
and the study of their properties [with summary in English]. Bio-  
khimiia 24 no.1:144-156 Ja-F '59. (MIRA 12:4)

1. Institute of Biological and Medical Chemistry, Academy of Medical  
Sciences of the U.S.S.R., Moscow.  
(ANTIGEN ANTIBODY REACTION  
isolation of pure antibodies with antigens fixed on  
cellulose (Rus))



SAZYKIN, Yuriy Osipovich; KRETOVICH, V.L., otv.red.; KAFNER,  
R.B., red.

[Biochemical principles of the action of antibiotics on  
the microbial cell] Biokhimicheskie osnovy deistviia anti-  
biotikov na mikrobnuiu kletku. Moskva, Nauka, 1965. 265 p.  
(MIRA 18:1)

1. Chlen-korrespondent AN SSSR (for Kretovich).

KAPNER, R.G.

KOVAL'SKIY, V.V., KAPNER, R.G.

Adaptational changes observed in certain dehydrases and arginase  
in animals following various types of feeding. Dokl. AN SSSR 112  
no.5:905-908 F '57. (MLRA 10:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut shivotnovodstva.  
Predstavleno akademikom L.A. Orbeli.  
(Arginase) (Dehydrogenases)

KAPNIK, G. K. BILYALOVA, V. E.

25229. KAPNIK, G. K. BILYALOVA, V. E. Kdiagno- Stike Vozvratnogo Tifa V Apirektieheskom  
Periode. Sov. Meditsina, 1949, No. 8. S. 21-22.

SO: Letopis' No. 33, 1949

KAFNIK, G. M. BUKHTEEV, S. F.

25228. KAFNIK, G. M. BUKHTEEV, S. F. Biokhimicheskie Sdvigi U Bol'nykh Vozvratnym Tifom i Svyazis Tekheniem Zabolevaniy. Terapevt Arkhy, 1949. VYP. 4. S. 59-65-  
Bibliogr: S. 65. 4

SO: Letopis' No. 33, 1949

*Chair Infectious Diseases, 1<sup>st</sup> Moscow Med. Inst.*

KAPNIK, G. M.

USSR/Medicine - Typhus

Nov 53

"Dynamics of the Disappearance of Serological Reactions in Persons Recovered From Typhus in Relation to the Clinical Course of the Disease,"  
G. M. Kapnik, T. B. Andreyeva, Moscow Inst of Epidem and Microbiol im Mechnikov

Zhur Mikro, Epid, i Immun, No 11, p 69

Correlates the course of the disease and immunological conditions after recovery with the titers of the Weil-Felix reaction and of the reaction of rickettsiae agglutination.

271T51

KAPNIK, G.M., kandidat meditsinskikh nauk (Moskva)

Clinical picture of the sporadic form of typhus exanthematicus.

Terap: arkh. 27 no.6:42-50 '55.

(MIRA 9:2)

(TYPHUS FEVER  
clin. aspects)

MUKHINA, O.W.; KAPNIK, G.M.; MASHKIN, M.I. (Moskva)

Study of contact specimens from the mucosa of the rectum and the sigmoid in dysentery. Klin.med.33 no.5:51-57 My '55.  
(MLRA 8:9)

1. Iz 1-y Klinicheskoy infektsionnoy bol'nitsy (glavnyy vrach N.G. Zaleskver)

(DYSENTERY, manifest.

mucosa of rectum & sigmoid)

(MUCOUS MEMBRANE, in various dis.

mucosa of rectum & sigmoid in dysentery)

(RECTUM, in various dis.

mucosal changes in dysentery)

(COLON, in various dis.

same)

KAPNIK, G.M.; KAPNIK, L.I.; TIMEN, Ya.Ye.

Preliminary data on the development of bacterial carriage in the typhoid-paratyphoid diseases. Zhur.mikrobiol., epid. i immun. 27 no.8:77-83 Ag '56. (MLRA 9:10)

1. Iz Infektsionnoy gorodskoy klinicheskoy bol'nitsy No.1 i Moskovskogo instituta vaktsin i syvorotok imeni I.I.Mechnikova.  
(TYPHOID FEVER,  
bact. carriage in convalescence (Rus))  
(PARATYPHOID FEVERS,  
same)



MIKHLIN, S.Ya., KAPNIK, G.M.; MUKHINA, O.N.

Clinical significance of quantitative determination of enterokinase  
in feces of patients with food poisoning. Terap.arkh. 28 no.3:  
32-36 '56. (MIRA 9:8)

1. Iz laboratorii pishchevareniya (sav. prof. G.K.Shlygin) Instituta  
pitaniya AMN SSSR i l-y klinicheskoy infektsionnoy bol'nitsy (nauchnyy  
rukovoditel' G.M.Kapnik), Moskva

(SALMONELLA INFECTIONS, diag.  
enterokinase determ. in feces)

(PROTEASES  
mold kinase determ. in feces in diag. of salmonella  
infect.)

(FECES,  
mold kinase determ in salmonella infect.)

KAPNIK, G.M.; MASEYEV, M.I.

New instrument for taking smears from mucous membrane of the  
distal segment of the large intestine. Lab. delo 3 no.1:50-52  
Ja-F '57 (MLRA 10:4)

1. Iz infektsionnoy gorodskoy klinicheskoy bol'nitsy no.1 (glavnyy  
vrach N.G. Zaleskver), Moskva.  
(MEDICAL INSTRUMENTS AND APPARATUS)

KAPNIK, G.M., kandidat meditsinskikh nauk; ZOLOTOVA, K.V..

Organization of care for convalescents following acute dysentery  
and their sanitary supervision. Sov.zdrav. 16 no.4:43-48 Ap '57.  
(MIRA 10:8)

1. Iz Infektsionnoy gorodskoy klinicheskoy bol'nitsy No.1 i  
poliklinicheskogo otdeleniya Gorodskoy bol'nitsy No.33 imeni  
A.A.Ostroumova (Moskva)

(DYSENTERY, BACILLARY,  
convalescence, care (Rus))

(CONVALESCENCE,  
in bacillary dysentery, care (Rus))

KAPNIK, G.M.

KAPNIK, G.M.; MIKHLIN, S.Ya.; MUKHINA, O.N.

Detecting functional intestinal disorders by studying enzymatic factors in gastrointestinal diseases of alimentary origin. Sov. med. 21 no.9:68-70 S '57. (MIRA 11:1)

1. Iz laboratorii pishchevareniya (sav. - prof. G.K.Shlygin)  
Instituta pitaniya Akademii meditsinskikh nauk SSSR i 1-y klinicheskoy infektsionnoy bol'nitsy (nauchnyy rukovoditel' G.M.Kapnik)

(GASTROINTESTINAL DISEASES, diag.

determ. of enterokinase in feces)

(PROTEASES, determ.

enterokinase in feces in diag. of gastrointestinal dis.)

(FECES

enterokinase determ. in diag. of gastrointestinal dis.)

KAPNIK, G.M.; MIKHLIN, S.Ya.; KAPNIK, L.I. (Moskva)

Detection of intestinal function disturbances in infectious hepatitis patients. Vrach.delo no.8:827-829 Ag '59. (MIRA 12:12)

1. Laboratoriya fiziologii pishchevareniya (zav. - prof. G.K. Shlygin)  
Instituta pitaniya AMN SSSR i Moskovskaya infetsionnaya klinicheskaya  
Bol'nitsa No.1.

(HEPATITIS, INFECTIOUS) (INTESTINES--DISEASES)

KAPNIK, G.M.; KAPNIK, L.I.; TIMEN, Ya.Ye.

Preliminary data on the development of bacterial carriage in the typhoid-paratyphoid diseases. Zhur.mikrobiol., epid. i immun. 27 no.8:77-83 Ag '56. (MLRA 9:10)

1. Iz Infektsionnoy gorodskoy klinicheskoy bol'nitsy No.1 i Moskovskogo instituta vaktsin i syvorotok imeni I.I.Mechnikova.

(TYPHOID FEVER,

bact. carriage in convalescence (Rus))

(PARATYPHOID FEVERS,

same)

KAPNIK, G.M.; MIKHLIN, S.Ya.; KAPNIK, L.I. (Moskva)

Detection of intestinal function disturbances in infectious hepatitis patients. Vrach, delo no.8:827-829 Ag '59. (MIRA 12:12)

1. Laboratoriya fiziologii pishchevareniya (zav. - prof. G.K. Shlygin)  
Instituta pitaniya AMN SSSR i Moskovskaya infetsionnaya klinicheskaya  
Bol'nitsa No.1.

(HEPATITIS, INFECTIOUS) (INTESTINES--DISEASES)

KAPNIK M. S.

USSR/Physics

May 1948

Photoelectric Cells, Selenium

"Photometric Comparison of Selenium Photoelectric Cells With Compensation Filters," M. S. Kapnik and S. G. Yurov, All-Union Elec Eng Inst imeni V. I. Lenin, Moscow, 6 pp

"Zhur Tekh Fiziki" Vol XVIII, No 5

Description and results of comparative experiments carried out on 9 cells of different makes. Method used was to measure strength of a colored light first by using cell, and then by a more accurate method. Quality of compensation of photo element was determined by divergence between measured and true values. Submitted 4 Nov 1947.

75700



KAFNIK, M. S.

Florescent lamps.

"Elektrichestvo", No.5, 1950.

*Journal of Technical Physics*  
*USSR, Vol. 18, No 5*

Morgulis, N.D. (Physics Institute, Ukrainian S.S.R. Academy of Sciences, Kiev),  
Ionization of atoms and neutralization of ions on the surface of the semi-conductor  
cathode, 567-72

"The ionization of atoms and the neutralization of ions on semi-conductor cathode  
surfaces was investigated as a continuation of previous work. The peculiarities of  
the phenomena associated with such systems are shown and differentiated from those  
occurring on metallic surfaces. Approximate expressions for their probabilities are  
given and an explanation for some of the facts observed."

Kapish, M.S. and Yurov, S.O. (V.I. Lenin All-Union Institute of Electrical Engineering),  
Photometric comparisons of selenium photo-elements with compensating filters, 573-8

Rozdestvenski, V.N. (Order of Lenin State Optics Institute), Application of gas dis-  
charge for the preparation of glass surfaces for aluminizing, 579-84

*Source: GTR SPL, Vol. 1, No 5*

KAPNIK, M. S.

USSR/Electricity - Illumination      Mar 51  
Fluorescent Lamps

"The Influence of the Frequency of Alternating Current on the Electrical and Illuminating Parameters of Fluorescent Lamps," M. S. Kapnik, Engr, All-Union Elec Eng Inst imeni Lenin

"Elektrichestvo" No 3, pp 62, 63

Shows the light yield of fluorescent lamps increases with increasing frequency and briefly explains this effect. Submitted (10 Jul 50.)

201T31

KAPNIK, M. Sii.

Electrical Engineering Abstracts  
May 1954  
Instruments

2007. A circuit for measuring the characteristics of fluorescent lamps. M. Sii. KAPNIK. *Elektricheskoe*, 1953, No. 3, 61-3. In Russian.

Experimental data presented prove that the measured luminous output of fluorescent lamps depends on the method of connecting the measuring instruments or photometric equipment. A rational testing circuit for fluorescent lamps is therefore suggested, which is based on the evaluation of the influence of the shunting resistance of the measuring instruments and the non-sinusoidal character of the supply voltage which is kept constant by ferro-resonant stabilizers. The use of fluorescent lamps as standards for photometry is deprecated and incandescent standard lamps are recommended instead. The test procedure to be applied to minimize all possible errors is described in full detail and the preferred types of instruments to be used are indicated.

B. F. KRAUS

*KAPNIK, M. SH.*

AID P - 656

Subject : USSR/Electricity  
Card 1/1 Pub. 27 - 25/34  
Author : Kapnik, M. Sh., Eng.  
Title : Portable mine fluorescent lamp (Review of Foreign Periodicals)  
Periodical : Elektrichestvo, 9, 90, 3 1954  
Abstract : The author summarizes an article by A. Wedemeyer in ETZ, p. 201, No. 5, 1954. 2 diagrams.  
Institution : None  
Submitted : No date

KAPNIK, M. S.

USSR/Physics

Card 1/1

Authors : Kapnik, M. (taken from G. D. Florida and C. N. Davey, J. Sci. Instr. 30, No. 11, 409, 1953)

Title : Sensitive photometer operating on alternating light current and its utilization in a uranium fluorometer

Periodical : Usp. Fiz. Nauk, 52, Ed. 4, 656 - 659, April 1954

Abstract : The described photometer has a sensitivity of  $10^{-10}$  lumen but the graduation consists of a part of the fluorometer used in determining very low amounts of uranium. The sensitivity of this fluorometer is such that it enables to establish the presence of uranium in the amount of  $5 \cdot 10^{-10}$  g. The photometer utilizes a 3-cascade amplifier with negative feedback stabilization. The amplification coefficient of each cascade is about 40. Selectivity is obtained by a single-link T-shaped filter connected between the anode and grid of the second cascade. This arrangement offers a strong negative feedback on all frequencies with the exception of the resonance frequency of the filter where complete amplification of the amplifier is attained. Drawings.

Institution : ....

Submitted : ....

KAPNIK, M.Sh.

Errors in electrostatic voltmeters in transition from D.C. to A.C.  
measurements. Izv. tekhn. no.3:59-60 My-Je '55. (MIRA 8:9)  
(Voltmeter)

KAPNIK, M. Sh.

AID P - 1613

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 22/27

Author : Kapnik, M. Sh.

Title : Instrument for the measurement of high resistances

Periodical : Elektrichestvo, 3, 80-82, Mr 1955

Abstract : The author summarizes a description which was published in the Review of Scientific Instruments, v.25, p.251, No.3, 1954. Three diagrams

Institution: None

Submitted : No date



KAPNIK, M.Sh.

A.c. industrial-frequency highly stable source for feeding testing  
instruments. Izv.tekh. no.1:78 '56. (MLRA 9:5)  
(Electric measurements)

KAPNIK, M. Sh.

Category : USSR/Optics - Photometry, colorimetry, and illumination engineering

K-10

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2621

Author : Kapnik, M.Sh.

Title : Automatic Photometer for Comparison of Brightness of Two Objects

Orig Pub : Izmerit. tekhnika, 1956, No 2, 84-85

Abstract : The photoelectric two-channel photometer is intended for comparison of the brightness of two luminescent specimens, one of which is considered standard. The common source of UV radiation is fed from the a-c line, and the specimens are thus illuminated with a modulated flux. The system is insensitive to variations in the dark current of the photocell, of the grid current, and of the contact potential difference at the input. Instability in the radiation from the common source has little effect on the measurement results: voltage fluctuations within 25 results change the measurement results by less than 0.5%. The instrument is such that a specimen consisting of 0.5 microgram uranium molten in 200 milligram NaF produces a current of approximately  $5 \times 10^{-7}$  amp. The block diagram of the photoelectric part of the instrument is given, and contains a servomechanism which attenuates the signal produced by the standard specimen to such an extent, that the fundamental harmonics of the signals from the measured and standard specimens become equal. The observed attenuation of the standard signal is read on a scale. The optical scheme is also given.

Card : 1/1

KAPNIK, M.Sh.

Accurate measurements of current, voltage, and power values using  
alternating current. Elektrichestvo no.2:86-88 F '56. (MLRA 9:5)  
(Electric measurements)

*KAPNIK, M. Sh.*

AUTHOR: Kapnik, M.Sh. 115-5-36/44

TITLE: Automatic Registering Spectrophotometers (Avtomaticheskiye registriruyushchiye spectrofotometry)

PERIODICAL: "Izmeritel'naya Tekhnika", No 5, Sep-Oct 1957, pp 83-88 (USSR)

ABSTRACT: The article presents detailed information on work principles of one-ray and two-ray spectrophotometers. It was compiled exclusively from foreign periodicals, in the most part from the Journal of the Optical Society of America (of the years 1935, 1938 and 1955).  
The article contains 6 diagrams and 9 references (all non-Slavic).

AVAILABLE: Library of Congress

Card 1/1